| | Case 1 | Case 2 | Case 3 | Case 4 |
|---|---|---|---|---|
| Gest. age at diagnosis | 18 weeks | 21 weeks | 20 weeks | 22 weeks, maternal |
| Associated findings | Poor cardiac function, small nuchal cystic hygroma, echogenic bowel, club foot | Fetal hydrops, large placenta | Bilateral hydronephrosis, placental abruption | Ascites, cerebral ventriculomegaly, decreased cardiac function. On f/u: resolution of ascites, progressive ventriculomegaly with microcephaly and mural calcifications, persistent patchy echogenic myocardium. |
| Fetal echocardiography | Epicardial calcifications, poor bi-ventricular function, possible hypoplastic RV, bouts of SVT | Heart enlarged, diffusely echogenic, poor contractility, bradycardia 80–90 bpm | N/A | Normal anatomy, generalized brightness of myocardium, moderately decreased function which improved on followup |
| Karyotype | 46,XY | 46,XX | N/A | 46,XY |
| Outcome | TOP | TOP | IUFD | C/S at 37 weeks, 2790 gr |
| Histo-pathology/post-natal followup | Structurally normal heart, near-circumferential calcification of epicardium and transmural involvement of RV outflow tract. Small bowel calcification. | Structurally normal heart, extensive atrial and focal epicardial scarring with calcification. | Structurally normal heart, calcified epicardial collagen, fibrosis and calcification of myometrium deep to epicardial calcifications, focal papillary muscle calcification. Large clot adherent to placenta, rt. upper quadrant calcifications. | Seizures, hydrocephalus with shunt placement, microcephaly, chorioretinal abnormalities, sensorineural deafness, cognitive developmental delay. |

For the 3 cases, a few similar echogenic intracardiac lesions compatible with rhabdomyomas are detected on routine echographic scan at 33, 34 and 35 weeks. For the first case, 3 hyperechogenic non obstructive tumors are observed on postnatal echocardiographic scan, with a conserved cardiac function, and normal clinical and radiologic observations. For the second case, multiple lesions are observed, one compromising fetal hemodynamic asking for surgical resection. Cerebral lesions had led to the diagnosis of tuberous sclerosis (TS) and partial regression was noted at age 2. For the 3rd case, TS was also diagnosed and complete regression of multiple intracardiac masses was observed at 5 years old. Tumors are often detected on routine sonographic scans in the second half of pregnancy. The most common type is rhabdomyoma concerning 70–80% of all cardiac tumors, which are often multiple, intracavitary or intramyocardic, associated in more than 50% of cases to a TS. Typical echographic findings are rounded, homogenous, hyperechogenic area. Partial or complete regression occurs in most newborns. However, development of intracardiac flow obstruction, alteration of valve function with regurgitation, and arrhythmias are poor prognostic indicators, and neurological impairment due to TS is frequently associated. Other types of tumors in order of frequency are fibromas, teratoma and myxomas.

## P05.26
## Cardiac rhabdomyoma in the left ventricular outflow tract of a fetus

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Tuberous sclerosis is a rare autosomal dominant disorder that occurs in approximately 1 : 10 000 births with the most common site of manifestation in the fetal heart.

**Case history:** This is a 38 year old G3 T1 A1 L1 patient. The mother has a history of secundum ASD and MVP. The father of the fetus has a diagnosis of tuberous sclerosis, and is relatively asymptomatic from the disease. Amniocentesis for AMA revealed a normal karyotype. She had a detailed second trimester scan, including fetal echocardiography at 19 weeks of gestation which was within normal limits. On a routine followup fetal echo at 30 weeks of gestation, a large, mobile echogenic mass was seen in the left ventricular outflow tract below the valve annulus. This mass moved like a flap in accordance with the cardiac cycle. Pulse wave Doppler revealed greatly elevated LVOT blood flow velocity and color Doppler showed considerable turbulence consistent with partial LVOT obstruction. There was no evidence of cardiac failure. The pregnancy is ongoing.

**Comment:** Cardiac rhabdomyomas are a common prenatal finding in fetuses affected by tuberous sclerosis. The absence of findings at 19 weeks, with subsequent appearance of a cardiac rhabdomyoma in a potentially critical location at 30 weeks underscores the need to perform serial antenatal fetal echocardiography on fetuses at risk of inheriting tuberous sclerosis.

## P05.27
## Fetal heart rate at 6 to 11 + 6 weeks of gestation

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**Objective:** To establish the normal limits of FHR at 6 to 11 + 6 weeks of gestation and to evaluate pregnancy loss risk depending on FHR values.

**Material and methods:** Transvaginal ultrasound using 2D and M-mode in 255 women in singleton pregnancies. Gestational week was established using measurements of GS and CRL. Demographic factors, obstetrical history and follow up were collected. Data was statistically reviewed (Chi test, Student T test, Mc Person correlation).

**Results:** Maternal age varied between 16 and 44 years (mean $29 \pm 5$ years) and paternal: 22–55 years (mean $31 \pm 6$ years). There were 67% primigravidas, 5% had a history of two or more deliveries, 7% had one or more abortions. FHR varied between 47 and 192 bpm (mean $154 \pm 26$ bpm). At 6 weeks mean FHR was $116 \pm 21$ bpm, then slowly increased reaching mean 172 bpm at 9–10 weeks. At 11 weeks the mean FHR achieved the level of $165 \pm 7$ bpm. Difference was statistically significant. The r–correlation ratio between FHR and gestational week was 0.58. Correlation between FHR, maternal age ($r = -0.2$ ns) and paternal age ($r = 0.05$ ns) were also analyzed. In 7 embryos (2.75%) at 6 + 1 to 8 + 1 weeks of gestation slow FHR was noted (< 100 bpm). The scan performed 7–10 days later revealed 6 miscarriages. In one case FHR increased up to 150 bpm and the pregnancy is ongoing. The overall risk of abortion in the group with FHR < 100 bpm was 86%.

**Conclusions:** FHR in the first trimester depends on gestational week, at 6 to 9 weeks increases and decreases after 10 weeks. The highest values of FHR are observed between 9 and 10 weeks of gestation. There is no correlation between FHR and parents' age. The risk of early pregnancy loss increases significantly in case of detecting slow FHR.